

Five-Year Review Report

Five-Year Review Report
for
Industrial Excess Landfill (IEL)
Uniontown
Stark County, Ohio

September 2006

Prepared By:



Region 5
United States Environmental Protection Agency
Chicago, Illinois

Approved by:

Date:

Richard C. Karl

Richard C. Karl, Director
Superfund Division
U.S. EPA Region 5

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
MCLs	Maximum Contaminant Levels
MNA	Monitored Natural Attenuation
MVS	Methane Venting System
MW	Monitoring Well
NCP	National Contingency Plan
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
ppm	parts per million
PRP	Potentially Responsible Party
RI	Remedial Investigation
ROD	Record of Decision
SDWA	Safe Drinking Water Act
ug/L	micrograms per liter
US EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WHC	Wildlife Habitat Council

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Executive Summary

This is the second Five-Year Review completed for the Industrial Excess Landfill (IEL) site in Uniontown, Ohio. The first Five-Year Review was conducted in 2001 on an alternate water supply interim remedy. This Five-Year review represents the first review of the final remedy for the entire IEL site selected under the Comprehensive Environmental Response Compensation and Liabilities Act (CERCLA). This remedy was selected in a September 2002 Record of Decision (ROD) Amendment. The results of this Five-Year Review indicate that the remedy is protective of human health and the environment. Overall, continued groundwater monitoring at the site shows consistently diminishing numbers and concentrations of Contaminants of Concern (COCs). In addition, methane concentrations in landfill gas continue to decrease and are not migrating offsite at concentrations sufficient to present a health threat to surrounding residents.

On September 27, 2002, a ROD Amendment was approved for the IEL site, which called for:

- ▶ Augmenting the existing vegetative cover with selected planting of trees and other plants at the site;
- ▶ Natural attenuation of groundwater contaminants both offsite and onsite;
- ▶ Monitoring of groundwater and landfill gas;
- ▶ Upgrading the existing monitoring well network by installing new wells, upgrading and/or abandoning other wells, as needed;
- ▶ Perimeter fencing;
- ▶ Deed Restrictions;
- ▶ Maintenance of Alternate Water Supply; and
- ▶ Additional Design Studies

The planting of the vegetative cover and repair of damaged fencing at the IEL site took place in the spring of 2004. So far, the majority of trees and shrubs planted at the site are showing acceptable growth and mortality rates.

Landfill gas monitoring results obtained from 23 sampling events conducted from August 2004 to June 2005, indicate that concentrations of methane are below levels of concern and continue to decrease. The landfill flaring system, which was used to collect and burn methane produced within the landfill, has now been shut down because there is not enough methane being produced by the landfill to sustain combustion.

Groundwater monitoring results, which have been obtained from ten sampling events conducted since the September 2002 ROD Amendment in November 2002, March 2003, July 2003, November 2003, February 2004, May 2004, August 2004, February 2005, August 2005, and November 2005, indicate that the concentrations of the COCs in groundwater at the IEL site are decreasing and that natural attenuation of site contaminants is occurring.

Therefore, the IEL remedy is considered to be protective of human health and the environment.

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Industrial Excess Landfill (IEL)		
EPA ID (from WasteLAN): OHD000377911		
Region: 5	State: Ohio	City/County: Stark County
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Construction completion date: <u>05 / 04 / 2005</u>	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency		
Author name: Timothy J. Fischer		
Author title: Remedial Project Manager	Author affiliation: US EPA, Region 5, Superfund	
Review period:** 01 / 12 / 2006 to 9/06		
Date(s) of site inspection: 4/26/06		
Type of review: <div style="text-align: center;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion </div>		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify)		
Triggering action: <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Construction Completion <input type="checkbox"/> Other (specify) </div> <div> <input type="checkbox"/> Actual RA Start at Site <input checked="" type="checkbox"/> Previous Five-Year Review Report </div> </div>		
Triggering action date (from WasteLAN): 09 / 27 / 2001		
Due date (five years after triggering action date): 09 / 27 / 2006		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Deficiencies/Issues:

The only issue identified in this review is the fact that the institutional controls required by the 2002 ROD Amendment have not yet been implemented at IEL. A partial Consent Decree was entered on April 7, 2005, which requires the settling defendants to obtain an agreement from the Site owners to execute and record an easement granting the right to enforce land and water use restrictions. Specifically, the easement must include restrictions to ensure that the Site would not be used in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed under the decree. In practice, this means implementing the restrictions set forth in the 2002 ROD Amendment: a prohibition on drinking water wells and residential development within the boundaries until such time as it can be shown that there are no risks associated with such uses. To date, the settling defendants have not obtained the required easement from the site owner, Industrial Excess Landfill, Inc. US EPA has not pressured the settling defendants to move forward for two reasons: (1) The last phase of cost recovery litigation for the IEL site is about to commence. One outcome of settlement negotiations, or if those fail, litigation, would be the recording by IEL, Inc. of the necessary easement. (2) In the meantime, the site is fenced and access is controlled by US EPA. There is no short-term danger of drinking water wells or residential development taking place on site. We therefore believe that implementation of the easement may safely be postponed, pending the outcome of negotiations/litigation with the site owner. We expect that, one way or another, the easement will be in place by June 30, 2007.

Recommendations and Follow-up Actions:

- (1) Site groundwater monitoring should be maintained according to the approved schedule contained in the RD Design Plan for the IEL Site (Attachment 4) for volatile organic compounds and natural attenuation parameters.
- (2) Institutional Controls should be placed upon the property and an IC plan should be developed.

Protectiveness Statement(s):

The remedy at the IEL site is protective of human health and the environment in the short-term. Long-term protectiveness will be achieved when institutional controls are in place.

Other Comments:

Industrial Excess Landfill (IEL) Five-Year Review Report

I. Introduction

EPA Region 5 has conducted a Five-Year Review of the remedial action implemented at the Industrial Excess Landfill (IEL) site in Stark County, Ohio. The review was conducted from January 2006 to September 2006, and this report documents the results of the review. The purpose of Five-Year Reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify deficiencies found during the review, if any, and identify recommendations to address them.

This review is being conducted as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121(c), as amended, states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

The NCP part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the second Five-Year Review for the IEL site. The triggering action for this review is the date of the first Five-Year Review conducted for the site, which was completed on September 27, 2001. Due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unrestricted use and unlimited exposure, another Five-Year Review is required.

II. Site Chronology

DATE	EVENT
1956 - 1961	The IEL Site was the location of a sand and gravel mining operation. Mining operations ceased in 1961, and local residents began using the site as a garbage dump.
1966	Mr. Charles Kittinger acquires title to the IEL property and begins operating a licensed commercial landfill.
1968	Mr. Kittinger forms Industrial Excess Landfill, Inc. with Mr. Hyman Budoff as a business partner.
1968 - 1980	IEL, Inc. operates the landfill, receiving liquid and solid wastes, including latex, grease, oil, laboratory chemical waste, rubber, and lampblack. A former employee estimated that approximately 100 barrels a day were disposed at the site. Based upon available records, it is estimated that 780,000 tons of waste and 1,000,000 gallons of liquid wastes were disposed at the site before it closed in 1980.
1984	US EPA proposed that the IEL site be placed on the National Priorities List (NPL).
1985-1988	US EPA conducts a Remedial Investigation at the IEL site. In addition, a US EPA Emergency Response Team installed an active methane venting system (MVS) at the IEL site. Air strippers were also placed in homes to the west of the landfill to remove vinyl chloride from water supplies. The Remedial Investigation Report was issued in July 1988.
September 1987	A Record of Decision is signed which calls for the installation of an alternative water supply system for area residents to serve as an interim remedy at IEL.
July 1989	A Record of Decision is signed selecting a multi-layer cap for the entire IEL site, a landfill gas extraction and treatment system, a groundwater pump-and-treat system, a requirement to pump groundwater to maintain the water table below the elevation of landfill wastes, fencing of the site, deed restrictions and future monitoring for landfill gases and groundwater.
1997-1998	Additional groundwater monitoring is conducted at the IEL site. Data from this monitoring indicated fewer contaminants were present in the groundwater and that concentrations were decreasing. As a result, US EPA proposed to amend the remedy at IEL by redesigning the landfill cover and eliminating the groundwater pump-and-treat system.

DATE	EVENT
March 1, 2000	A Record of Decision Amendment is signed selecting the modified remedy for the entire IEL site.
2000	The PRPs conduct additional demolition activities at the IEL site, including: 1) sampling contents of remaining post-ROD drums, 2) checking for presence of asbestos in remaining buildings, 3) disposing of trash, debris, and debris-like wastes found inside buildings in and around the landfill, and 4) conducting geophysical surveys around remaining buildings to determine what underground structures may be present. Demolition of three buildings and the removal of eight underground storage tanks were completed in June 2000.
July 2000	US EPA announced that it would delay construction of the modified landfill cover at IEL after receiving a petition from Lake Township officials stating that additional testing was warranted before a final remedy decision to cap the site could be made.
2000-2001	The PRPs at IEL conduct 5 groundwater sampling events for metals, VOCs, and radioactive parameters. After reviewing the results of these five groundwater sampling efforts, and after considering an alternate proposal for addressing the site provided by the PRPs and supported by Lake Township officials, U.S. EPA announced another Proposed Plan calling for a change in the remedy for the IEL site.
September 27, 2001	The first Five-Year Review of the IEL alternate water supply remedy is completed and signed.
September 27, 2002	A Record of Decision Amendment is signed selecting a final remedy for the entire IEL site. This plan includes the following components for the site: 1) augmentation of the existing vegetative cover at IEL with selective planting of trees and other plants at the site; 2) natural attenuation of groundwater contaminants both offsite and onsite; 3) continued monitoring of groundwater and landfill gas; 4) perimeter fencing; 5) deed restrictions on the future use of the IEL property; 6) maintenance of the alternate water supply installed in 1991; and 7) additional design studies. An extensive Responsiveness Summary was produced in response to the over 130 comments received on this new remedy decision.
September 2003	Remedial Design work for the IEL remedy is completed.
2003 - 2004	Landfill gas and groundwater monitoring are continued at the site. Fencing is repaired and the vegetative landfill cover is planted in the Spring of 2004. Ambient air sampling is also conducted at the IEL site in preparation for a future risk assessment at the site.

DATE	EVENT
December 2004	A Construction Complete Report is issued by the PRPs indicating that they have completed the construction of the remedy required by the September 2002 ROD Amendment.
May 2005	A Preliminary Close-Out Report is signed to grant US EPA approval that the remedy has been successfully constructed.

III. Background

A. Physical Characteristics/Land and Resource Use

IEL is a privately-owned, 30-acre, mixed-waste landfill, located at 12646 Cleveland Avenue, Uniontown, Ohio, approximately 10 miles southeast of Akron (Maps are in Attachment 1). The landfill closed in 1980. Homes are located principally to the north, west, and southwest of the site. A sod farm is located to the east of the landfill, across from a rather narrow stream called Metzger Ditch. Covered with grasses, small trees, and shrubs, the site itself is gently sloping, with the highest elevation towards the northwest corner. The area around IEL is rural/residential - a mixture of residential, agricultural, commercial, and light industrial use. Located between Akron and Canton, the area has become increasingly residential with many new homes being built nearby. According to the 2000 Census, 2,802 people live in Uniontown, while Lake Township has a population of 25,892.

B. History of Contamination

Prior to 1966, the 30-acre Industrial Excess Landfill (IEL) site, located in Stark County, Ohio, was used for mining sand and gravel. In 1966, the mining and excavation pit was converted into a landfill, which operated until 1980. During this time, the IEL received industrial waste primarily from the rubber industries in Akron, Ohio. An estimated 780,000 tons of solid waste and 1,000,000 gallons of liquid waste were dumped onto the ground and into an evaporation lagoon constructed onsite. In 1972, the Stark County Board of Health ordered IEL to stop dumping chemical wastes. Besides industrial wastes, the landfill also accepted waste from hospitals, septic tank cleaning firms, and the general public. The landfill ceased operations in 1980, and was covered with soil.

Between 1985 and 1988, US EPA installed a methane gas venting system at the site to control the migration of methane and landfill gases offsite. During the installation of this system, 53 drums of suspected industrial waste were uncovered. These drums were removed and disposed of in a US EPA-approved facility. Residential well sampling performed in 1987 showed that private wells were being impacted by groundwater contaminated by VOCs from the IEL site. US EPA installed air strippers in the affected residences to remove these contaminants.

In July 1988, a Remedial Investigation (RI) report was prepared for IEL, copies of which are available for viewing at the site repository files in Hartville, Ohio. The RI revealed that the following conditions were present at the IEL site at the time: 1) 80-85 percent of the site was covered with various types of waste; 2) about 780,000 tons of waste had been disposed of at the site, including 1,000,000 gallons of liquid waste; 3) groundwater was contaminated with IEL-related wastes, such as vinyl chloride, and groundwater contamination was found in some residential wells nearby; and 4) a groundwater plume of contamination extended approximately a thousand feet west of the landfill boundary along Cleveland Avenue. Since the RI was completed in 1988, groundwater conditions at IEL have changed significantly. As many as 81 different organic compounds have been detected at one time in the groundwater at IEL in the past. During sampling conducted in November 2005, only nine different organic compounds were detected, and only three of those compounds exceeded their respective Maximum Contaminant Levels (MCLs) established in the Safe Drinking Water Act. This is a strong indication that natural attenuation processes are at work, which result in natural biodegradation of site contaminants in groundwater.

C. Initial Response

Between 1985 and 1988, US EPA installed a methane gas venting system at the site to control the migration of methane and landfill gases offsite. During the installation of this system, 53 drums of suspected industrial waste were uncovered. These drums were removed and disposed of in an U.S. EPA-approved facility. Residential well sampling performed in 1987 showed that private wells were being impacted by groundwater contaminated by VOCs. US EPA installed air strippers in the affected residences to remove the contaminants.

In 1987, US EPA signed a Record of Decision (ROD) requiring that an alternate water supply be installed in an area containing 100 homes downgradient of the site where groundwater threatened to contaminate wells before an overall cleanup could eliminate the problem. Under order by US EPA, several potentially responsible parties (PRPs) constructed an alternate water supply, which was completed in 1991. In July 1989, US EPA signed a ROD selecting the following actions to clean up the site: covering the entire site with a multi-layer cap; expanding the landfill gas extraction and treatment system; extracting and treating contaminated groundwater; pumping groundwater to maintain the water table at a level that is below that of the wastes in the landfill; fencing the site; placing deed restriction of future use of the site, and continued monitoring of the site. In 1990, US EPA purchased 22 parcels of land, consisting of twelve residences and two businesses. These properties, which bordered the site, were needed for proper installation of the landfill cap.

Based on the results of monitoring data gathered in March 1997 and September 1998, US EPA public noticed a proposed plan to modify the cleanup plans outlined in the July 1989 ROD. The data indicated that significantly fewer contaminants were present in the groundwater and that the concentrations of those detected were generally lower. As a result, the proposed plan recommended that the pump and treat system be eliminated, and the landfill cover be redesigned.

A public meeting was held on March 2, 1999 to discuss this proposed agency action. The ROD Amendment was signed on March 1, 2000. An extensive responsiveness summary, addressing over 250 questions gathered during the public comment period, was prepared along with the ROD Amendment.

In 2000, the PRPs conducted demolition activities at IEL including: 1) sampling contents of remaining post-ROD drums at the site and inside the remaining buildings 2) checking for presence of asbestos in the remaining buildings 3) disposing all trash, debris, and debris-like wastes found inside the buildings and around the landfill; and 4) conducting geophysical surveys around the remaining buildings and adjacent areas to determine what underground structures are present and require further investigation. Demolition of three remaining buildings at the site, along with removal of eight underground storage tanks, were completed by June 2000.

D. Basis for Taking Remedial Action

Remedial Action was necessary at the IEL site to prevent unacceptable human health risks associated with human contact with landfill wastes and with the ingestion of contaminated groundwater which had migrated to downgradient receptors. The RI Report for the IEL site documented numerous liquid and solid wastes were present at the site, and groundwater sampling in the past had consistently shown volatile organic compounds present above the allowable Maximum Contaminant Levels (MCLs) in the aquifer below the IEL site.

IV. Remedial Action

A. Remedy Selection

On September 27, 2002, a ROD Amendment was approved for the IEL site, which called for:

- ▶ Augmenting the existing vegetative cover with selected planting of trees and other plants at the site;
- ▶ Natural attenuation of groundwater contaminants both offsite and onsite;
- ▶ Monitoring of groundwater and landfill gas;
- ▶ Upgrading the existing monitoring well network by installing new wells, upgrading and/or abandoning other wells, as needed;
- ▶ Perimeter fencing;
- ▶ Deed Restrictions;
- ▶ Maintenance of Alternate Water Supply; and
- ▶ Additional Design Studies

This final remedy for the IEL site was selected to address all contaminated media at the site, including: contaminated soil and groundwater, landfilled wastes, and emission of landfill gases.

US EPA's remedial objectives for the landfill portion of the IEL site were to:

- Reduce migration of contaminants in waste to groundwater;
- Prevent future exposure to contaminants by ingestion and through dermal contact;
- Return groundwater to beneficial use wherever practicable, within a reasonable time frame, given the circumstances at the site; and
- Ensure continued protection of the community from undue risks posed by landfill gas.

B. Remedy Implementation

The remedial design for the IEL site was started in July 2003, and work plans were completed in September 2003. The design called for upgrading site security by repairing damaged sections of the IEL perimeter fencing, constructing a vegetative cover by planting trees and shrubs and ridding the site of various invasive species, constructing the final groundwater monitoring network by installing new wells where necessary and abandoning wells that were no longer required for long-term monitoring, and installing additional landfill gas monitoring wells in areas of the site perimeter that did not have adequate coverage for monitoring landfill gases that could migrate laterally from the site through the subsurface.

Site Security

Sharp & Associates, Inc. (SHARP), now Los Alamos Technical Associates, Inc. (LATA), on behalf of Bridgestone/Firestone North American Tire, LLC (Bridgestone/Firestone), completed a survey of the existing perimeter fencing and repaired or replaced sections of the fence that had been found breached. Fallen trees or brush were also removed as needed to repair/replace the fencing. A new gate was also installed along the northern boundary of the landfill site to allow access to monitoring well MW-16 New. All other gates were repaired as needed to ensure their continued integrity and operability.

All site monitoring wells were checked to verify that working locks were in place. A few wells were outfitted with new locks, as necessary.

Finally, four warning signs were placed (one on each side of the site) to identify the IEL site as a US EPA Superfund site and to identify the appropriate contacts in Region 5 for questions/concerns.

Vegetative Cover

In April 2004, Ecological Restoration, Inc. (ERI), under the direction of the Wildlife Habitat Council (WHC), planted 8,424 trees and shrubs at the IEL site. The primary objectives of these plantings were to provide a stable and protective soil covering at the IEL site and to foster the development of a diverse wildlife population. The weather at the time of planting was generally cool and wet, which provided ideal conditions for planting. A machine-run auger was used to create holes for the majority of the plantings, and they were then planted in the ground by hand. Attachment 2 to this report presents the numbers and types of plants installed each day. US EPA personnel were on-site at the time of planting to oversee these activities.

On April 29, 2004, a meadow area was tilled and sprayed with weed killers. After a waiting period of a few days, ERI returned to seed the meadow with wildflowers.

The conditions of all of the plantings were monitored monthly during the growing season. So far the majority of the trees and shrubs planted at the site in 2004 are showing acceptable growth and mortality rates. All necessary replantings were completed in Spring 2005.

In addition to the required vegetative enhancements to the IEL site cover, other site enhancements were recommended by the WHC and implemented at IEL. Artificial nesting structures, including brush piles, ten bluebird boxes, and two bat box pairs were installed in the summer of 2004. The brush piles were created as downed wood was consolidated and invasive species were controlled. Also, waste debris (such as pieces of tire and plastic) that were found in various places around the IEL site were collected and placed in roll-off boxes for disposal offsite.

Groundwater Monitoring Network Construction

In accordance with the approved Remedial Design Plan for IEL, five new groundwater monitoring wells were installed at the site in the spring of 2004. These new wells were identified as MW-29, MW-30, MW-31, MW-16 New and MW-17 New. MW-29 and MW-31 are located along the western edge of the landfill, and they were installed to provide closer downgradient coverage. This will allow for a faster indication if site contaminants begin to migrate offsite at higher concentrations in the future. MW-16 New and MW-17 New are located along the northern boundary of the landfill, and they were installed to replace older single-cased wells that were constructed through the landfill waste along the north side of the landfill. MW-30 is located upgradient of the IEL site and serves as an additional "background" well (along with MW-12i) that is representative of upgradient groundwater conditions.

Along with the installation of new wells, 34 monitoring wells were abandoned because they were no longer necessary for long-term monitoring at IEL. Some of these wells had never shown contamination after years of sampling, and some were producing results that were not considered to be representative of groundwater conditions at the site. 24 of the abandoned monitoring wells were located in areas outside the waste area of the landfill, and 10 wells were single-cased wells

installed through the waste material. Many of these single-cased wells were suspected or shown to have lost integrity, allowing them to become conduits for landfill contamination to reach the groundwater beneath the site.

In addition to the 34 wells approved for abandonment, SHARP located and abandoned 17 piezometers/staff gage clusters that were installed offsite by US EPA in 1994 as part of an additional IEL groundwater investigation. The existence of these wells was discovered in May 2004.

The installation and abandonment of all groundwater and landfill gas monitoring wells are documented in the *Well Installation Report for the Industrial Excess Landfill (IEL) Superfund Site, Uniontown, Ohio*, dated March 18, 2004, and the *Well Abandonment Report for the Industrial Excess Landfill (IEL) Superfund Site, Uniontown, Ohio*, dated September 2004. The final groundwater monitoring network for the IEL site consists of 29 wells completely encircling the site, with the majority of the wells located along the western (downgradient) side of the landfill. A list of the wells included in the final groundwater monitoring network for IEL, along with their designations, is included as Attachment 3. These wells will be sampled according to the schedule in Attachment 4. A map depicting the locations of these monitoring wells is included as Attachment 5.

Landfill Gas Monitoring Network Construction

SHARP planned to install five new landfill gas monitoring wells along the eastern boundary of the landfill where there was not existing coverage, as approved in the Remedial Design Plan for IEL. Four of the five wells were installed in the spring of 2004. One well was not installed because groundwater was encountered within one foot of the ground surface in its planned location, preventing vadose zone installation.

The installation and abandonment of all groundwater and landfill gas monitoring wells are documented in the *Well Installation Report for the Industrial Excess Landfill (IEL) Superfund Site, Uniontown, Ohio*, dated March 18, 2004, and the *Well Abandonment Report for the Industrial Excess Landfill (IEL) Superfund Site, Uniontown, Ohio*, dated September 2004. In drilling all new wells, SHARP documented the encountered geology for incorporation into the sitewide hydrogeological characterization. This information was used to update the information contained in the *Addendum to the Well Installation Report for the Industrial Excess Landfill (IEL) Site and the Regional Hydrogeologic Setting, December 12, 2000, (Revised August 22, 2003)*.

Institutional Control Implementation

ICs are non-engineered instruments, such as administrative and legal controls that help to minimize the potential to exposure to contamination and that help protect the integrity of the remedy. ICs are required to assure long-term protectiveness for any areas which do not allow for unlimited use or unlimited exposure (UU/UE).

The institutional controls required by the 2002 ROD Amendment have not yet been implemented at IEL. A partial Consent Decree was entered on April 7, 2005, which requires the settling defendants to obtain an agreement from the Site owners to execute and record an easement granting the right to enforce land and water use restrictions. Specifically, the easement must include restrictions to ensure that the Site would not be used in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed under the decree. In practice, this means implementing the restrictions set forth in the 2002 ROD Amendment: a prohibition on drinking water wells and residential development within the boundaries until such time as it can be shown that there are no risks associated with such uses. To date, the settling defendants have not obtained the required easement from the site owner, Industrial Excess Landfill, Inc. - currently a non-settling party. The site is fenced and access is controlled by US EPA. Therefore, there is no short-term danger of drinking water wells or residential development taking place on site. US EPA expects that, one way or another, the easement will be in place in the near future.

IC maps will be created which depict the details of the areas where the use restrictions are required. The IC maps, once completed, will be publicly available and on EPA's Superfund Data Management System (SDMS). These maps will serve as an additional IC as an informational control.

Implementation of the institutional control provisions in the September 2002 ROD Amendment and the 2005 Consent Decree will require obtaining an easement from Industrial Excess Landfill, Inc., the landfill site owner. To address IC implementation and long-term stewardship, an Institutional Control Plan will be provided by US EPA, which includes 1) implementation of ICs, as needed; 2) provisions for modifications of the O&M Plan regarding regular inspections and annual IC certification; 3) a communication plan; and 4) IC maps in both paper and GIS format showing both the area where ICs were required and where they have been implemented. Taking these steps is necessary in order to ensure the long-term protectiveness of the remedy. In the short term, even though institutional controls have not yet been implemented, the remedy is protective because the Site is fenced, access is solely through a locked gate, and warning signs are posted at regular intervals. There is no short-term danger of drinking-water well installation or residential development taking place at the Site.

C. System Operations/O&M

The only remaining treatment system at the IEL site is the methane venting system (MVS). Based upon landfill gas sampling results obtained in the last two years, it has been determined that it is no longer feasible or necessary to actively operate the MVS system. The venting system has been left "open", and is currently operating as a passive venting system rather than an active one. Continued monitoring shows that current landfill gas concentrations do not present an unacceptable risk or hazard to surrounding residents.

The Operation and Maintenance (O&M) costs associated with the IEL site remedy are associated with the continued landfill gas and groundwater monitoring being conducted on a regular basis at the site. The cost associated with the groundwater monitoring at the IEL site is about \$30,000 per sampling event. Given the low levels of landfill gases currently detected and the expected reduction in landfill gas concentrations with time, it is anticipated that additional landfill gas monitoring will be greatly reduced and costs will be negligible in comparison to groundwater monitoring costs.

V. Progress Since the Last Five-Year Review

The IEL site is somewhat unique in that the first Five-Year Review was conducted prior to the construction of a final remedy at the site. The review of the interim alternate water supply remedy was conducted in September 2001. Since that time, a final remedy for the IEL site was selected and documented in the September 2002 ROD Amendment, a remedial design was accomplished in 2003, and the final remedy was constructed in 2004.

This is the first Five-Year Review for the entire IEL site since the final CERCLA remedy was constructed. The results of this Five-Year Review indicate that the remedy is protective of human health and the environment in the short-term. Long-term protectiveness will be achieved when institutional controls are in place.

VI. Five-Year Review Process

A. Administrative Components

This IEL site Five-Year Review was conducted by Timothy J. Fischer, Remedial Project Manager for the IEL site. This Five-Year Review consisted of the following activities: a review of relevant documents (see Section VI(E) on page 12) and a site inspection (See inspection checklist in Attachment 7 and inspection photos in Attachment 8).

B. Community Involvement and Notification

A notice regarding the forthcoming review was placed in the Akron Beacon-Journal, the Canton Repository, and the Hartville News, all local newspapers, on March 24, 2006 (Attachment 9). The completed report will be available in the information repository and from US EPA Region 5. Notice of its completion, with a summary of findings, will be placed in the local newspaper and local contacts will be notified by letter.

C. Interviews

Specific Interviews were determined to be unnecessary for this Five-Year Review, since the only components of the remedy were installation of a vegetative cover, fence repair, landfill gas sampling, and long-term groundwater monitoring, with results documented in a series of sampling and analysis reports.

D. Site Inspection

Representatives of US EPA and Ohio EPA took part in a site inspection on April 26, 2006. During the site inspection, landfill gas and groundwater monitoring wells were inspected, fencing was inspected, and the progress of the growth of planned vegetation at the site was observed. A summary of the inspection findings is presented below. A Five-Year Review inspection checklist was completed and is included in this report as Attachment 7. Photographs taken during the inspection are included in Attachment 8.

Conditions during the inspection were favorable with mild temperatures and no precipitation. Site vegetation demonstrated acceptable growth over the previous two years, although some invasive species were present. The entire site is now covered with vegetation ranging from various grasses to trees and shrubs. Animal tracks, including deer tracks, were evident over the entire site. Rodents and birds were observed in many places onsite. Also, several bird nests were seen in the bat boxes and bird houses that were constructed onsite by the Wildlife Habitat Council. The fencing was intact around most of the perimeter of the site, although there were a few places where downed trees had damaged the fence. Access to the site has still been adequately controlled to prevent unacceptable exposures. All of the monitoring wells appeared to be in good condition, with locked and intact caps.

E. Document Review

The list of specific documents which were reviewed is shown below:

Final Remedial Investigation Report for Industrial Excess Landfill, Uniontown, Ohio, prepared by the US EPA, July 1988.

Industrial Excess Landfill Superfund Site Record of Decision and Responsiveness Summary, prepared and signed by US EPA on July 17, 1989.

Record of Decision Amendment - Industrial Excess Landfill Superfund Site - Uniontown, Stark County, Ohio, prepared and signed by US EPA on March 1, 2000.

Report: Five Year Review - Industrial Excess Landfill Superfund Site - Stark County, Ohio - OHD000377911, prepared and signed by US EPA Region 5 on September 27, 2001.

Record of Decision Amendment - Industrial Excess Landfill Superfund Site - Uniontown, Stark County, Ohio - prepared and signed by the US EPA on September 27, 2002.

Summary Report on the November 2002 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., January 2003.

Summary Report on the March 2003 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., June 2003.

Summary Report on the July 2003 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., November 2003.

Summary Report on the November 2003 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., January 2004.

Summary Report on the February 2004 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., July 2004.

Summary Report on the May 2004 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., January 2005.

Summary Report on the August 2004 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., January 2005.

Contruction Complete Report for the Remedial Action Implementation at the Industrial Excess Landfill (IEL) Site, prepared by Sharp and Associates, Inc., on behalf of Bridgestone/Firestone North American Tire, LLC, December 22, 2004.

Summary Report on the February 2005 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., May 2005.

Industrial Excess Landfill (IEL) Preliminary Close Out Report (PCOR) - Uniontown, Stark County, Ohio, prepared by US EPA - Region 5, May 2005.

Report on the Landfill Gas Monitoring at the Industrial Excess Landfill (IEL) Superfund Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., July 2005.

Summary Report on the August 2005 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., September 2005.

Summary Report on the November 2005 GW Sampling Event at the Industrial Excess Landfill Site, Uniontown, Ohio, prepared by Sharp and Associates, Inc., April 2006.

F. Risk Information Review

The following standards were identified as applicable or relevant and appropriate requirements (ARARs) in the ROD. They were reviewed for changes that could affect protectiveness:

- Safe Drinking Water Act (40 CFR Parts 141-146)

Federal standards for the contaminants of concern have not changed since the signing of the ROD Amendment in September 2002.

G. Data Review

Landfill Gas

Landfill gas has been sampled in 23 different monitoring events at IEL between August 25, 2004 and June 7, 2005. A map of the landfill gas monitoring wells in place as part of the final remedy at IEL is included as Attachment 6. Monitoring was conducted with the MVS system operating and with the system shut off. Landfill gas monitoring over time showed the following:

- The concentrations of methane detected with the MVS system off (and the landfill gas extraction wells converted to passive vents by opening them to the air) are comparable to the concentrations found in the same wells during recent periods when the MVS was operating.
- The concentrations of detected constituents in the landfill gas were consistently within a narrow range throughout the year-long evaluation. Concentrations generally appear to be decreasing slowly.

Methane concentrations are low (near or below the detection limit using a combustible gas indicator) at most of the passive vents (including the active MVS vents that were converted to passive vents). However, vents in two areas continue to show percent-level methane concentrations. These locations are PV-8 and PV-9 in the north-central portion of the landfill and PV-13 in the southwest portion of the landfill.

Two perimeter landfill gas well clusters have also routinely shown methane concentrations in excess of 5%. These wells are LFG-9 and LFG-18. The concentrations in LFG-9 have dropped below 5% since the well has been capped between sampling events. Only well LFG-18 continues to show methane concentrations above 5% consistently. Overall intra-well results comparisons show methane concentrations are typically less than the mean plus one standard deviation. This finding suggests that methane concentrations are declining and that there is little degree of fluctuation about the mean. Overall concentrations of methane are below levels of concern and continue to decrease.

During the last several years the MVS system was operated 2-3 times per week for about two hours each time. The landfill gas collected by the active MVS system routinely had to be supplemented with propane in order to sustain combustion of the MVS flare due to the lean percentage of methane in the landfill gas. Under current conditions (with active vents converted to passive), methane concentrations are comparable to concentrations seen with the MVS system actively pulling methane out of the landfill. Therefore, there is no apparent benefit to operating the MVS to collect landfill gases.

Based upon the results of the landfill gas sampling studies, site conditions are likely to continue to improve over time. For this reason, additional site monitoring for landfill gases will continue on a less frequent basis. Whenever changes to site use are contemplated, the potential impacts of these changes to the degree and duration of potential human exposures to landfill gases should be evaluated.

For more information regarding the results of landfill gas monitoring at IEL, refer to the *Report on Landfill Gas Monitoring at the Industrial Excess Landfill (IEL) Superfund Site - Uniontown, Ohio*, dated July 2005.

Groundwater Data

Groundwater monitoring has been conducted at the IEL site on ten different occasions since the ROD Amendment was signed in September 2002. These sampling events occurred in November 2002, March 2003, July 2003, November 2003, February 2004, May 2004, August 2004, February 2005, August 2005 and November 2005. A list of the monitoring wells in place as part of the final IEL remedy is included as Attachment 3.

When the remedial investigation was completed at IEL in 1988, as many as 81 different volatile organic compounds were detected in the groundwater at the site. Today, only nine VOC compounds are still consistently detected at IEL, and only three of those exceed the allowable MCLs established in the Safe Drinking Water Act. The nine VOC contaminants detected in IEL groundwater during the last groundwater sampling event in November 2005 were:

- **1,1 Dichloroethene,** which has an MCL of 7 ug/L;
- **1,2 Dichloroethane,** which has an MCL of 5 ug/L;
- **cis-1,2 Dichloroethene,** which has an MCL of 70 ug/L;
- **Vinyl chloride,** which has an MCL of 2 ug/L;
- **Benzene,** which has an MCL of 5 ug/L;
- **Chloroethane,** which has no MCL;
- **1,1 Dichloroethane,** which has no MCL;
- **Acetone,** which has no MCL; and
- **Methylene Chloride,** which has no MCL.

Only three of the compounds detected at IEL (vinyl chloride, 1,2 dichloroethane and cis-1,2 dichloroethene) exceed their respective safe drinking water standards. In addition, these three contaminants currently exceed their MCLs in only two of the 30 monitoring wells at the site. These two wells are located along the western boundary of the site (in the direction of groundwater migration). The results of the continued long-term groundwater monitoring at the IEL site for these three monitoring wells are presented in Table 1, on page 17.

The results for MW-11i show a consistently decreasing trend for vinyl chloride to the point where it has not been detected above the 2 ug/L MCL for four consecutive sampling events now. 1,2 Dichloroethane and cis-1,2 dichloroethene have never been detected in MW-11i.

MW-21s shows consistent detections of vinyl chloride and 1,2 dichloroethane over the three and a half years of sampling. Vinyl chloride results range from 1.7 to 5.0 ug/L. 1,2 dichloroethane results range from non-detect to 6.8 ug/L. Cis-1,2 dichloroethene has been detected around 10 ug/L in MW-21s, which is far below the MCL of 70 ug/L.

MW-29 was installed on January 7-8, 2004, as part of the final remedy for IEL. It has been sampled during every groundwater sampling event since the February 2004 sampling event. MW-29 has consistently demonstrated the highest results for groundwater contaminants since its installation at the IEL site, indicating that it is probably located closer to a source of groundwater contamination than other downgradient site wells. Vinyl chloride results in MW-29 range from 7.8 to 11 ug/L. 1,2 dichloroethane results range from 21 to 25 ug/L in MW-29. Also, MW-29 is the only monitoring well at IEL with results above the MCL for cis-1,2 dichloroethene. The results for this compound range from 72 to 91 ug/L, with the MCL being 70 ug/L.

Table 1
Summary of MCL Exceedances at IEL site

VC - vinyl chloride (MCL = 2 ug/L)
1,2 DCA - 1,2 Dichloroethane (MCL = 5 ug/L)
cis-1,2 DCE - cis-1,2 dichloroethene (MCL = 70 ug/L)

	MW-11i	MW-21s	MW-29**
November 2002	VC - 3.6 ug L 1,2 DCA - ND	VC - 5.0 ug L 1,2 DCA - 6.1 ug L	-----
March 2003	VC - 3.7 ug L 1,2 DCA - ND	VC - 3.7 ug L 1,2 DCA - 6.0 ug L	-----
July 2003	VC - 3.6 ug L 1,2 DCA - ND	VC - 4.6 ug L 1,2 DCA - 6.8 ug L	-----
November 2003	VC - 2.3 ug L 1,2 DCA - ND	VC - 3.1 ug L 1,2 DCA - 5.5 ug L	-----
February 2004	VC - 3.0 ug L 1,2 DCA - ND	VC - 4.4 ug L 1,2 DCA - 6.8 ug L	VC - 10 ug L 1,2 DCA - 22 ug L cis-1,2 DCE - 72 ug L
May 2004	VC - 2.6 ug L 1,2 DCA - ND	VC - 4.0 ug L 1,2 DCA - 6.7 ug L	VC - 9.4 ug L 1,2 DCA - 22 ug L cis-1,2 DCE - 80 ug L
August 2004	VC - 1.4 ug L 1,2 DCA - ND	VC - 4.3 ug L 1,2 DCA - 6.7 ug L	VC - 11 ug L 1,2 DCA - 25 ug L cis-1,2 DCE - 78 ug L
February 2005	VC - ND 1,2 DCA - ND	VC - 3.3 ug L 1,2 DCA - ND	VC - 10 ug L 1,2 DCA - 23 ug L cis-1,2 DCE - 87 ug L
August 2005	VC - ND 1,2 DCA - ND	VC - 1.7 ug L 1,2 DCA - 4.8 ug L	VC - 7.8 ug L 1,2 DCA - 21 ug L cis-1,2 DCE - 81 ug L
November 2005	VC - 1.5 ug L 1,2 DCA - ND	VC - 3.2 ug L 1,2 DCA - 5.6 ug L	VC - 9.9 ug L 1,2 DCA - 23 ug L cis-1,2 DCE - 91 ug L

TABLE KEY

ug L - micrograms per liter (equivalent to parts per billion)

ND = Analyte not detected

** - MW-29 was installed on January 7-8, 2004

All results for all wells and all contaminants *not shown* in the table are below applicable RGs or MCLs.

Although vinyl chloride, 1,2 dichloroethane, and cis-1,2 dichloroethene have consistently been detected above their respective MCLs in monitoring wells MW-11i, MW-21s and MW-29, these compounds have not been detected above their MCLs in downgradient offsite wells. This indicates that the VOC contamination is not migrating off of the IEL site at concentrations that exceed the allowable drinking water standards.

Two metals have also been consistently detected in IEL groundwater. These two metals are arsenic and thallium. Arsenic and thallium are common constituents in the clay soils surrounding the IEL site, and these two metals are routinely detected in the site background wells. The two IEL background wells (MW-12i and MW-30) are located offsite and upgradient from the IEL site.

VII. Technical Assessment

The following conclusions support the determination that the remedy at the IEL site is protective of human health and the environment.

Question A: Is the remedy functioning as intended by the decision documents?

- ***Remedial Action Performance:*** The remedy at IEL is functioning as intended. Both landfill gas and groundwater have been sampled routinely since the 2002 ROD Amendment, and results demonstrate that methane concentrations in landfill gas are decreasing, the number of groundwater contaminants is decreasing, and the concentrations of detected groundwater contaminants are decreasing. A perimeter fence is preventing access to the IEL site and there is no indication that the site is being used in a manner that would result in an unacceptable exposure to site contaminants.
- ***Implementation of Institutional Controls and Other Measures:*** Access to the site is still being controlled by metal fencing which surrounds the property. Eventually, this fencing may be removed if risk calculations support this future use. In any case, restrictions will be placed on the deed to the property which restrict excavation at the site, prevent the installation of any groundwater wells on the IEL property, and prevent residential use of the IEL property. This will be accomplished when a final settlement/agreement is reached with the IEL landfill property owner or the property is transferred to another owner. In the meantime, the site is fenced and access is controlled by US EPA. There is no short-term danger of drinking water wells or residential development taking place on site.
- ***Early Indicators of Potential Remedy Failure:*** No early indicators of potential remedy failure were noted during the review. Costs and monitoring activities have been consistent with expectations.

Question B: Are the assumptions used at the time of remedy selection still valid?

- ***Changes in Standards and To Be Considered:*** This Five-Year Review identified no changes in the Federal or State standards which were considered in the remedy selection process. Therefore, all relevant assumptions are still valid.
- ***Changes in Exposure Pathways:*** No changes in site conditions that affect exposure pathways were identified as part of the Five-Year Review. First, there are no current or planned changes in land use, and, in fact, access is currently restricted by physical controls. Second, no new contaminants, sources, or routes of exposure were identified as part of this Five-Year Review. Finally, the rate of decrease of contaminant levels in groundwater at the IEL site is matching expectations and no unacceptable concentrations of groundwater contaminants are migrating off of the IEL site. The migration of landfill gases is controlled and the concentration of methane in the landfill gas is slowly decreasing with no active collection or treatment at the IEL site.
- ***Changes in Toxicity and Other Contaminant Characteristics:*** Toxicity and other factors for contaminants of concern have not changed.
- ***Changes in Risk Assessment Methodologies:*** Changes in risk assessment methodologies since the time of the 2002 ROD Amendment do not call into question the protectiveness of the remedy.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has been identified that would call into question the protectiveness of the remedy.

Technical Assessment Summary

Site security is being maintained through the use of perimeter fencing. Some small sections of fencing need repair, but there is no indication that the damage has resulted in the use of the IEL site in a manner that would result in an unacceptable risk to site trespassers. Four signs have also been placed on the site fence (one on each side) to identify the IEL site as a Superfund site and to provide contact information. These signs are still present and in good repair.

In April 2004, Ecological Restoration, Inc. (ERI), under the direction of the Wildlife Habitat Council (WHC), planted 8,424 trees and shrubs at the IEL site. The primary objectives of these plantings were to provide a stable and protective soil covering at the IEL site and to foster the development of a diverse wildlife population. The conditions of all of the plantings were monitored monthly during the growing season. So far the majority of the trees and shrubs planted at the site in 2004 are showing acceptable growth and mortality rates.

Landfill gas has been sampled in 23 different monitoring events at IEL between August 25, 2004 and June 7, 2005. Monitoring was conducted with the MVS system operating and with the system shut off. Landfill gas monitoring over time showed the following:

- The concentrations of methane detected with the MVS system off (and the landfill gas extraction wells converted to passive vents by opening them to the air) are comparable to the concentrations found in the same wells during recent periods when the MVS was operating.
- The concentrations of detected constituents in the landfill gas were consistently within a narrow range throughout the year-long evaluation. Concentrations generally appear to be decreasing slowly.

Based upon the results of these studies, site conditions are likely to continue to improve over time. For this reason, additional site monitoring for landfill gases will continue on a less frequent basis. Whenever changes to site use are contemplated, the potential impacts of these changes to the degree and duration of potential human exposures to landfill gases should be evaluated.

Groundwater monitoring has been conducted at the IEL site on ten different occasions since the ROD Amendment was signed in September 2002. These sampling events occurred in November 2002, March 2003, July 2003, November 2003, February 2004, May 2004, August 2004, February 2005, August 2005 and November 2005.

When the IEL remedial investigation was completed at IEL in 1988, as many as 81 different volatile organic compounds were detected in the groundwater at the site. Today, only nine VOC compounds are still consistently detected at IEL, and only three of those (vinyl chloride, 1,2 dichloroethane and cis-1,2 dichloroethene) exceed the allowable MCLs established in the Safe Drinking Water Act. In addition, these three contaminants currently exceed their MCLs in only two of the 30 monitoring wells at the site. These two wells are located along the western boundary of the site (in the direction of groundwater migration). Based upon these results, it is clear that monitored natural attenuation is occurring at the IEL site and that VOC cleanup goals will eventually be achieved for the three remaining compounds above MCLs.

VIII. Deficiencies/Issues

There was only one issue identified during this Five-Year Review with respect to the IEL remedy. The institutional controls required by the 2002 ROD Amendment have not yet been implemented at IEL. A partial Consent Decree was entered on April 7, 2005, which requires the settling defendants to obtain an agreement from the Site owners to execute and record an easement granting the right to enforce land and water use restrictions. Specifically, the easement must include restrictions to ensure that the Site would not be used in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed under the decree. In practice, this means implementing the restrictions set forth

in the 2002 ROD Amendment: a prohibition on drinking water wells and residential development within the boundaries until such time as it can be shown that there are no risks associated with such uses. To date, the settling defendants have not obtained the required easement from the site owner, Industrial Excess Landfill, Inc. - currently a non-settling party. The site is fenced and access is controlled by US EPA. Therefore, there is no short-term danger of drinking water wells or residential development taking place on site. US EPA expects that, one way or another, the easement will be in place in the near future.

Issue	Affects Current Protectiveness	Affects Future Protectiveness
The institutional controls required by the 2002 ROD Amendment have not yet been implemented at IEL. EPA expects that ICs will be in place by June 30, 2007.	N	Y

The remedy at IEL remains protective of human health and the environment in the short-term. Site access has been adequately controlled and landfill gas and groundwater contaminant concentrations are decreasing, as expected in the 2002 ROD Amendment for the site. Long-term protectiveness will be achieved when institutional controls are implemented and maintained.

IX. Recommendations and Follow-Up Actions

The only remaining actions to be completed at the site are the continued groundwater monitoring events until concentrations of contaminants meet all appropriate cleanup standards (MCLs), along with occasional landfill gas sampling. Sampling for groundwater contaminants will occur in accordance with the schedule approved in the approved *Remedial Design Plan for the Industrial Excess Landfill (IEL) Site*, dated September 22, 2003. This schedule is included as Attachment 4. The number of wells monitored or contaminants measured may be reduced in the future if contaminant concentrations continue to decrease or if contaminants are no longer detected. The perimeter fence will remain around the IEL landfill property until a risk assessment demonstrates it is protective to be on the landfill property in the future and until restrictions on the reuse of the property have been placed in the deed. Future use of the property will be restricted to prevent excavation and to prevent the installation of additional groundwater wells. An easement to prevent the installation of drinking water wells, excavation, and residential development on the landfill should be implemented. This may be achieved by agreement with the site owner; or if no agreement is reached, by litigation.

Issue	Recommendations/ Follow-Up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness?	
					Current	Future
An IC Plan has not yet been developed for the IEL site.	An IC Plan* must be provided by US EPA to provide for IC implementation and long-term stewardship.	US EPA	State EPA	3/31/2007	N	Y
The institutional controls required by the 2002 ROD Amendment have not yet been implemented at IEL.	The settling defendants must obtain an agreement from the Site owners to execute and record an easement granting the right to enforce land and water use restrictions.	PRPs	State EPA		N	Y

* - The IC Plan will include 1) implementation of ICs, as needed; 2) provisions for modifications of the O&M Plan regarding regular inspections and annual IC certification; 3) a communication plan; and 4) IC maps in both paper and GIS format showing both the area where ICs were required and where they have been implemented.

X. Protectiveness Statements

The remedy at the IEL site is protective of human health and the environment in the short-term. Long-term protectiveness will be achieved when effective institutional controls are implemented and maintained.

XI. Next Review

The next review for the IEL site will be conducted within five years after the completion of this Five-Year Review report. The completion date of this report is the date of the signature shown on the signature cover attached on the front of this report.

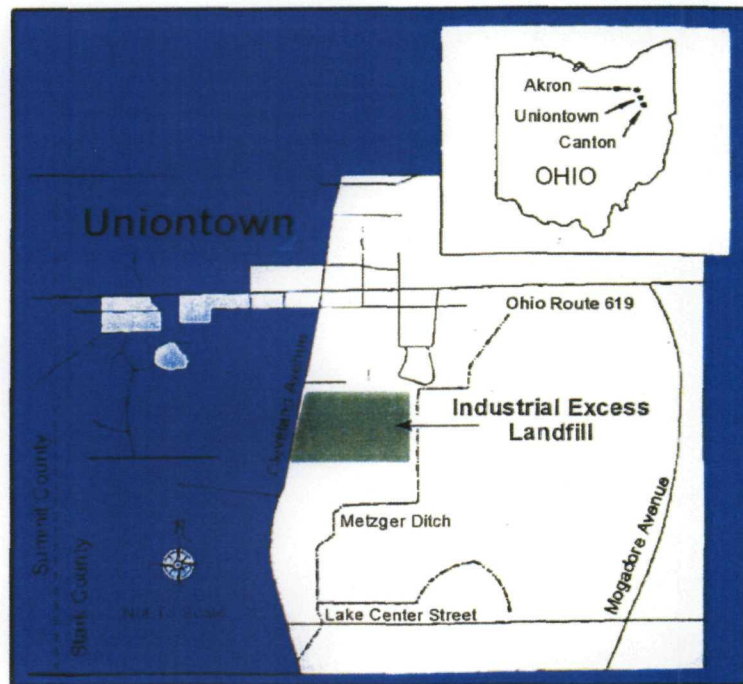
Attachment 1

Site Map

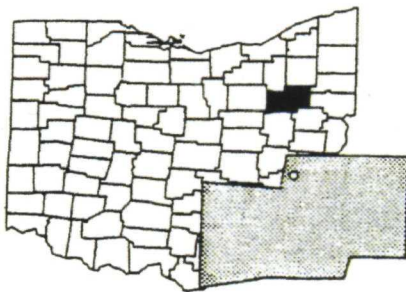
Figure 1

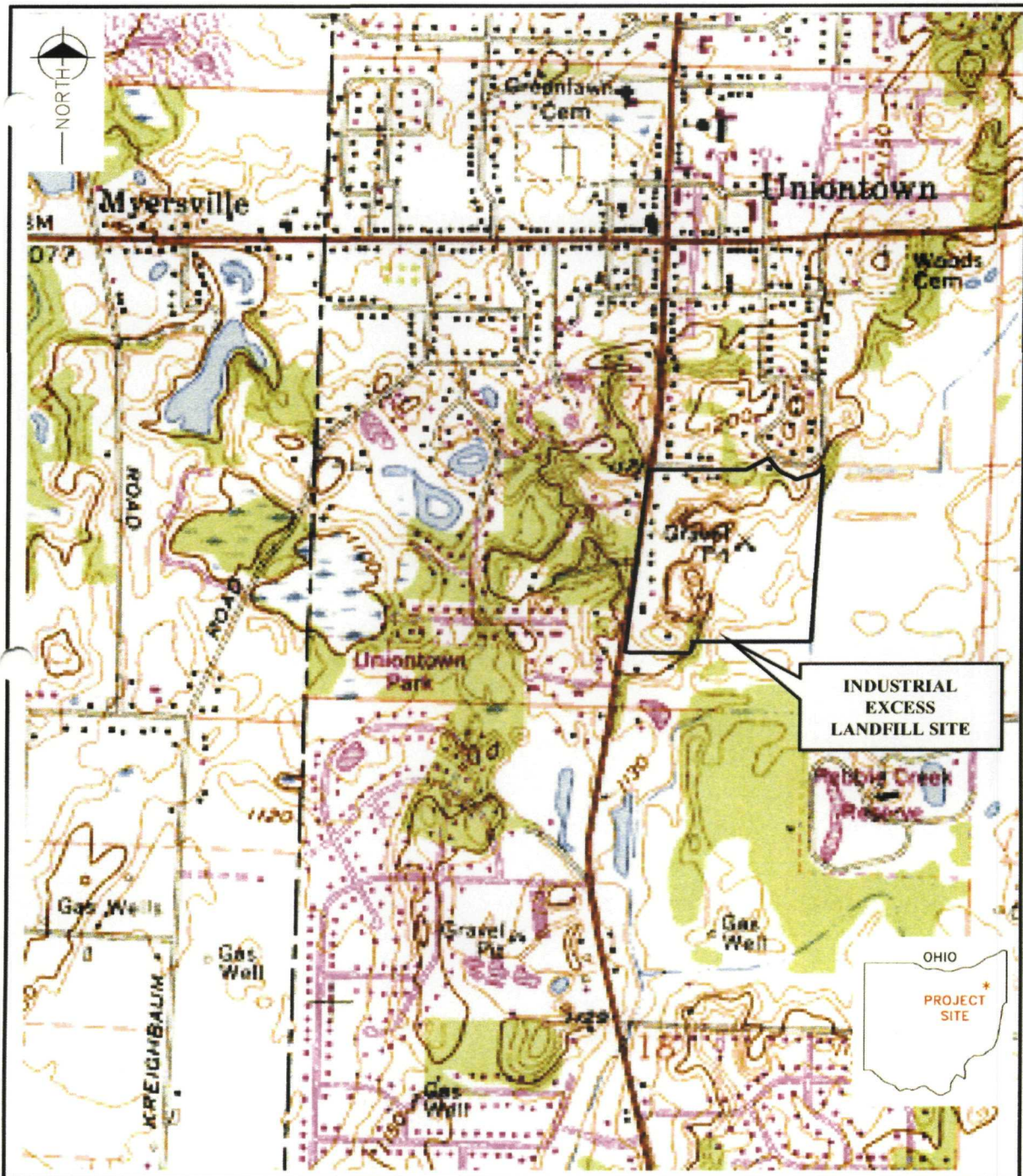
Industrial Excess Landfill

EPA ID#
OHD00377911



EPA Region 5
Stark County
10 miles from Akron





SHARP
AND ASSOCIATES, INC.
982 CHURCH AVE.
COLUMBUS, OHIO 43229
(614) 541-4529 / FAX (614) 541-4549

SITE LOCATION MAP

INDUSTRIAL EXCESS LANDFILL
UNIONTOWN, OHIO

PROJECT NUMBER 2101	DATE 08/15/03	FILE NAME 2101/FIG.1	SCALE N.T.S.
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FIGURE

1

Attachment 2

Vegetative Cover List of Plant Species and Dates Planted

Table 4. Species and Dates Planted

Monday 4/26/04

Shrub Thickets

600' length x 5 layers

3,000' 5 ft/shrub

Species

Red cedar	<i>Juniperus virginiana</i>	550 bare-root
Cockspur hawthorn	<i>Crateagus crusgalli</i>	500 bare-root (2-4')
Blackhaw viburnum	<i>Viburnum prunifolium</i>	300 bare-root (2-4')
Red chokeberry	<i>Aronia arbutifolia</i>	300 bare-root (2-4')
Hercules club	<i>Aralia spinosa</i>	20 7 gallon

Subtotal Monday

1670

Tuesday 4/27/04

South Grids – Reforestation

Gray dogwood	<i>Cornus racemosa</i>	2400 bare-root
Cockspur hawthorn	<i>Crataegus crusgalli</i>	1100 bare-root
Red maple	<i>Acer rubrum</i>	50 5-gallon
Green ash	<i>Fraxinus pennsylvanica</i>	5 5-gallon
Scarlet oak	<i>Quercus coccinea</i>	550 5-gallon
Pin cherry	<i>Prunus pennsylvanica</i>	20 5-gallon
Red Chokeberry	<i>Aronia arbutifolia</i>	32 5-gallon
Shagbark Hickory	<i>Carya ovata</i>	150 bare-root

Subtotal Tuesday

4307

Wednesday 4/28/04

South Grids-front row

Gray dogwood	<i>Cornus racemosa</i>	600 bare-root
Gray dogwood	<i>Cornus racemosa</i>	120 5-gallon
Cockspur hawthorn	<i>Crataegus crusgalli</i>	800 bare-root
Scarlet Oak	<i>Quercus coccinea</i>	75 bare-root
Shagbark hickory	<i>Carya ovata</i>	150 bare-root
Pin cherry	<i>Prunus pennsylvanica</i>	30 5-gallon
Red cedar	<i>Juniperus virginiana</i>	300 bare-root
Red cedar	<i>Juniperus virginiana</i>	60 tube
Red chokeberry	<i>Aronia arbutifolia</i>	64 1-gallon tube
Red chokeberry	<i>Aronia arbutifolia</i>	100 bare-root

Wetland

Silky dogwood	<i>Cornus amomum</i>	5 5-gallon
Buttonbush	<i>Cephalanthus occidentalis</i>	5 5-gallon
Ninebark	<i>Physiocarpus opulifolius</i>	5 bare-root
Speckled alder	<i>Alnus rugosa</i>	128 1-gallon tube
Speckled alder	<i>Alnus rugosa</i>	5 5-gallon

Subtotal Wednesday

2527

Grand Total Planting

8424

Thursday 4/29/04

Meadow Preparation

Test spraying of invasives

Attachment 3

List of IEL Groundwater Monitoring Wells

Table 1. Monitoring Well Network Tier Designations and Summary, 2004

#	Well ID	Tier	Location	Dedicated Pump?	Notes
1	MW-01I	Sentinel	ON-SITE	YES	
2	MW-01D	Contingency	ON-SITE	YES	Deep well on western boundary
3	MW-01S	Sentinel	ON-SITE	YES	Shallow well (straddles water table)
4	MW-03I	Perimeter	ON-SITE	YES	
5	MW-07I	Sentinel	ON-SITE	YES	
6	MW-07D	Contingency	ON-SITE	YES	Deep well on southern boundary
7	MW-09I	Contingency	ON-SITE	YES	Extra background well
8	MW-10I	Perimeter	OFF-SITE	YES	
9	MW-11I	Sentinel	ON-SITE	YES	
10	MW-11D	Contingency	ON-SITE	YES	Deep well on western boundary
11	MW-11S	Sentinel	ON-SITE	YES	Shallow well (straddles water table)
12	MW-12I	Background	OFF-SITE	YES	
13	MW-13i New	On-Site	ON-SITE	YES	replacement well, 2002
14	MW-14i New	On-Site	ON-SITE	YES	replacement well, 2002
15	MW-16 New	Perimeter New	ON-SITE	YES	replacement well, outside waste
16	MW-17 New	Perimeter New	ON-SITE	YES	replacement well, outside waste
17	MW-18S	Perimeter	ON-SITE	YES	
18	MW-18I	Perimeter	ON-SITE	YES	
19	MW-21S	Sentinel	ON-SITE	YES	
20	MW-21I	Contingency	ON-SITE	YES	Deep well on western boundary
21	MW-22I	Perimeter	ON-SITE	YES	
22	MW-23S	Perimeter	OFF-SITE	YES	
23	MW-24I	Downgradient	OFF-SITE	YES	
24	MW-25S	Downgradient	OFF-SITE	YES	
25	MW-26S	Downgradient	OFF-SITE	YES	
26	MW-27I	Downgradient	OFF-SITE	YES	
27	MW-29 New	Sentinel New	ON-SITE	YES	new sentinel well
28	MW-30 New	Background New	OFF-SITE	YES	new background well
29	MW-31 New	Sentinel New	ON-SITE	YES	new sentinel well

Tier Summary		
Tier Designation	Well Description	Monitoring Purpose / Approach
Sentinel Wells: 8 wells: 1s, 1i, 7i, 21s, 11s, 11i, 29, 31	Located along western boundary of landfill	Will detect migration downgradient from landfill if it occurs
On-Site Wells: 2 wells: 13i and 14i	Double-cased new wells installed through waste	Provide early indications of migration from landfill contents
Background: 2 wells: 12i, 30	Up gradient	Identify regional changes; monitor naturally-occurring constituents
Perimeter Wells: 7 Wells: 3i, 18i, 18s, 22i, 16, 17, 23s	Along landfill perimeter but cross-gradient	Provide coverage of uppermost aquifer in all compass directions
Downgradient Wells: 5 24i, 25s, 26s, 27i, 10i	Further downgradient than sentinel wells	Allow measurement of extent should sentinel wells show detects
Contingency Wells: 5 9i, 1d, 11d, 21i, 7d	Western-southern boundary wells retained	Sampled only if results in 1i, 11i, 21s, 7i, and 30 warrant
New Wells: 5 16, 17, 29, 30, 31	Replacement: 16, 17 Background: 30 Sentinel 29, 31	Northside boundary coverage Better Sentinel well coverage Better background location

Attachment 4

Schedule for Groundwater Sampling

Table 10. Proposed 30-year IEL Sampling Event Matrix
as of 9/22/2003

Notes: Seven monitoring events conducted prior to August 2000. Remedy "in-place" since 1980.
Regular monitoring using modern techniques conducted beginning in August 2000; i.e. year one through year three
has already been completed under an agreement with the Township under the supervision of USEPA and OhioEPA.
Assume new monitoring wells installed before August 2004 event.

Monitoring Year	Years Post ROD	Event #	Date	Monitoring Well Tiers to be Sampled	Analytical Parameters	Rationale
Year One		1	August-2000	All Tiers	VOC's, Metals, Nat'l, RAD	Supplement the historic database, characterize seasonal variation, monitor natural attenuation processes and chemical constituents on-site; monitor for potential off-site impacts via sentinel wells; put RAD issue to bed.
		2	November-2000	All Tiers, Tier A1** only for RAD	VOC's, Metals, Nat'l, RAD	
		3	February-2001	Tier S, B, OW; Tier A1 only for RAD	VOC's, Metals, Nat'l, RAD	
		4	May-2001	Tier S, B, OW; Tier A1 only for RAD	VOC's, Metals, Nat'l, RAD	
Year Two		5	August-2001	Tier S, B, OW;	VOC's, Metals, Nat'l	Monitor that no off-site migration of landfill constituents is occurring, monitor on-site conditions
		6	May-2002	Tier S, B, OW	VOC's, Metals, Nat'l	
		7	July-2002	All Tiers	VOC's, SVOC's, Metals, Nat'l	All Tiers-Parameters to complete characterization
Year Three		8	November-2002	Tier S, B	VOC's, Metals	Monitor that no off-site migration of landfill constituents is occurring. Snapshot of on-site conditions
		9	March-2003	Tier S, B, OW	VOC's	
		10	July-2003	All Tiers	VOC's, Nat'l	All Tiers to supplement database and confirm nat'l
REMEDIAL ACTION APPROVED						
2003 Year Four	0	11	November-2003	All Tiers	VOC's	
		12	February-2004	All Tiers	VOC's	
		13	May-2004	All Tiers/G-11	VOC's	
		14	August-2004	All Wells	VOC's, SVOC's, Metals, Nat'l	
Year Five	1	15	February-2005	Sentinel, On-Site	VOC's	Number of sampled wells reduced as long as results warrant.
		16	August-2005	Sentinel, On-Site	VOC's	
Year Six	2	17	November-2005	Sentinel, On-Site	VOC's	
		18	May-2006	All Tiers	VOC's, SVOC's, Metals, Nat'l	
Year Six			September-2006	CERCLA 5-YEAR REVIEW		Previous 5-year Review in 2001
Year Seven	3	19	August-2007	All Tiers	VOC's	Planned Annual Sampling of all wells for all parameters unless superseded by agreement
Year Eight	4	20	May-2008	All Tiers	VOC's	
Year Nine	5	21	February-2009	All Tiers	VOC's	
Year Ten	6	22	November-2010	All Tiers	VOC's	
Year Eleven	7	23	May-2011	All Tiers	VOC's, SVOC's, Metals, Nat'l	
Year Eleven			September-2011	CERCLA 5-YEAR REVIEW		Previous 5-year Review in 2006
Years 12-33	30	24-34	2012-2033	All Tiers	VOC's, SVOC's, Metals, Nat'l	Biannual sampling of all wells-parameters unless superseded by agreement.

24 Total Number of Events, post-ROD

34 Total Number of Events, post August 2008

Attachment 5

Map of IEL Groundwater Monitoring Wells

Attachment 6

Map of IEL Landfill Gas Monitoring Wells

Attachment 7

Five-Year Review Inspection Checklist

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION	
Site name: <u>INDUSTRIAL EXCESS LANDFILL</u>	Date of inspection: <u>4/26/06</u>
Location and Region: <u>UNIONTOWN, OH</u>	EPA ID:
Agency, office, or company leading the five-year review:	Weather/temperature: <u>SUNNY, ~60°F</u>
Remedy Includes: (Check all that apply) Landfill cover/containment <input checked="" type="checkbox"/> Access controls Institutional controls <input checked="" type="checkbox"/> Groundwater pump and treatment Surface water collection and treatment Other _____ Monitored natural attenuation <input checked="" type="checkbox"/> Groundwater containment Vertical barrier walls	
Attachments: Inspection team roster attached Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager _____ <div style="display: flex; justify-content: space-between;"> Name Title Date </div> Interviewed at site at office by phone Phone no. _____ Problems, suggestions; Report attached _____ _____	
2. O&M staff _____ <div style="display: flex; justify-content: space-between;"> Name Title Date </div> Interviewed at site at office by phone Phone no. _____ Problems, suggestions; Report attached _____ _____	

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions;	Report attached		

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions;	Report attached		

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions;	Report attached		

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions;	Report attached		

4. **Other interviews (optional)** Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents ✓ O&M manual As-built drawings Maintenance logs Remarks _____	Readily available Readily available Readily available	Up to date Up to date Up to date	N/A N/A N/A
2.	Site-Specific Health and Safety Plan ✓ Contingency plan/emergency response plan Remarks _____	Readily available Readily available	Up to date Up to date	N/A N/A
3.	O&M and OSHA Training Records Remarks _____	Readily available	Up to date	N/A
4.	Permits and Service Agreements Air discharge permit Effluent discharge Waste disposal, POTW Other permits _____ Remarks _____	Readily available Readily available Readily available Readily available	Up to date Up to date Up to date Up to date	N/A N/A N/A N/A
5.	Gas Generation Records Remarks _____	Readily available	Up to date	N/A
6.	Settlement Monument Records Remarks _____	Readily available	Up to date	N/A
7.	Groundwater Monitoring Records ✓ Remarks _____	Readily available	Up to date	N/A
8.	Leachate Extraction Records Remarks _____	Readily available	Up to date	N/A
9.	Discharge Compliance Records Air Water (effluent) Remarks _____	Readily available Readily available	Up to date Up to date	N/A N/A
10.	Daily Access/Security Logs Remarks _____	Readily available	Up to date	N/A

IV. O&M COSTS																																											
1.	O&M Organization State in-house _____ Contractor for State _____ PRP in-house _____ Contractor for PRP _____ Federal Facility in-house _____ Contractor for Federal Facility _____ Other _____																																										
2.	O&M Cost Records Readily available _____ Up to date _____ Funding mechanism/agreement in place _____ Original O&M cost estimate _____ Breakdown attached _____ Total annual cost by year for review period if available <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 40%;">Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td>Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td>Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td>Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td>Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> </table>			From _____	To _____		Breakdown attached	Date	Date	Total cost		From _____	To _____		Breakdown attached	Date	Date	Total cost		From _____	To _____		Breakdown attached	Date	Date	Total cost		From _____	To _____		Breakdown attached	Date	Date	Total cost		From _____	To _____		Breakdown attached	Date	Date	Total cost	
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From _____	To _____		Breakdown attached																																								
Date	Date	Total cost																																									
3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: _____ _____ _____ _____ _____																																										
V. ACCESS AND INSTITUTIONAL CONTROLS																																											
		Applicable	N/A																																								
A. Fencing ✓																																											
1.	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Fencing damaged</td> <td style="width: 20%;">Location shown on site map</td> <td style="width: 20%;">Gates secured</td> <td style="width: 20%; text-align: center;">N/A</td> </tr> <tr> <td colspan="4">Remarks <u>two locations with damage. Evidence of trespassers and deer entering - leaving site.</u></td> </tr> </table>			Fencing damaged	Location shown on site map	Gates secured	N/A	Remarks <u>two locations with damage. Evidence of trespassers and deer entering - leaving site.</u>																																			
Fencing damaged	Location shown on site map	Gates secured	N/A																																								
Remarks <u>two locations with damage. Evidence of trespassers and deer entering - leaving site.</u>																																											
B. Other Access Restrictions																																											
1.	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Signs and other security measures</td> <td style="width: 20%;">Location shown on site map</td> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">N/A</td> </tr> <tr> <td colspan="4">Remarks <u>Signs present on fencing and entrance gate.</u></td> </tr> </table>			Signs and other security measures	Location shown on site map		N/A	Remarks <u>Signs present on fencing and entrance gate.</u>																																			
Signs and other security measures	Location shown on site map		N/A																																								
Remarks <u>Signs present on fencing and entrance gate.</u>																																											

C. Institutional Controls (ICs)				
1	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	Yes	No	N/A
	Site conditions imply ICs not being fully enforced	Yes	No	N/A
	Type of monitoring (e.g., self-reporting, drive by) _____			
	Frequency _____			
	Responsible party/agency _____			
	Contact _____			
	Name	Title	Date	Phone no.
	Reporting is up-to-date		Yes	No
	Reports are verified by the lead agency		Yes	No
	Specific requirements in deed or decision documents have been met		Yes	No
	Violations have been reported		Yes	No
	Other problems or suggestions: Report attached			
<u>ICs not yet implemented, as final settlement has not been reached with property owner and property transfer deed has not occurred</u>				
2.	Adequacy	ICs are adequate	ICs are inadequate	N/A
	Remarks _____			
D. General				
1.	Vandalism/trespassing	Location shown on site map	No vandalism evident	
	Remarks <u>Some evidence of trespassing</u>			
2.	Land use changes on site	N/A		
	Remarks _____			
3.	Land use changes off site	N/A		
	Remarks _____			
VI. GENERAL SITE CONDITIONS				
A. Roads	Applicable	N/A		
1.	Roads damaged	Location shown on site map	Roads adequate	N/A
	Remarks _____			

B. Other Site Conditions			
Remarks _____ _____ _____ _____			
VII. LANDFILL COVERS Applicable N/A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Remarks _____	Location shown on site map _____ Depth _____	<u>Settlement not evident</u>
2.	Cracks Lengths _____ Widths _____ Remarks _____	Location shown on site map _____ Depths _____	<u>Cracking not evident</u>
3.	Erosion Areal extent _____ Remarks _____	Location shown on site map _____ Depth _____	<u>Erosion not evident</u>
4.	Holes Areal extent _____ Remarks _____	Location shown on site map _____ Depth _____	<u>Holes not evident</u>
5.	<u>Vegetative Cover</u> Grass <u>Cover properly established</u> Trees/Shrubs (indicate size and locations on a diagram) Remarks <u>vegetation over entire site - very few small bare areas.</u>	No signs of stress	
6.	Alternative Cover (armored rock, concrete, etc.) Remarks _____	N/A	
7.	Bulges Areal extent _____ Remarks _____	Location shown on site map _____ Height _____	<u>Bulges not evident</u>

8.	Wet Areas/Water Damage	<u>Wet areas/water damage not evident</u>	
	Wet areas	Location shown on site map	Areal extent _____
	Ponding	Location shown on site map	Areal extent _____
	Sceps	Location shown on site map	Areal extent _____
	Soft subgrade	Location shown on site map	Areal extent _____
	Remarks _____		
9.	Slope Instability	Slides	Location shown on site map <u>No evidence of slope instability</u>
	Areal extent _____		
	Remarks _____		
B. Benches Applicable N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench	Location shown on site map	N/A or okay
	Remarks _____		
2.	Bench Breached	Location shown on site map	N/A or okay
	Remarks _____		
3.	Bench Overtopped	Location shown on site map	N/A or okay
	Remarks _____		
C. Letdown Channels Applicable N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement	Location shown on site map	No evidence of settlement
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Material Degradation	Location shown on site map	No evidence of degradation
	Material type _____	Areal extent _____	
	Remarks _____		
3.	Erosion	Location shown on site map	No evidence of erosion
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Undercutting Areal extent _____ Remarks _____	Location shown on site map _____ Depth _____	No evidence of undercutting
5.	Obstructions Location shown on site map _____ Size _____ Remarks _____	Type _____ Areal extent _____	No obstructions
6.	Excessive Vegetative Growth No evidence of excessive growth Vegetation in channels does not obstruct flow Location shown on site map _____ Remarks _____	Type _____ Areal extent _____	
D. Cover Penetrations Applicable N/A			
1.	Gas Vents Properly secured/locked Active Functioning Evidence of leakage at penetration N/A Remarks _____	Passive Routinely sampled Needs Maintenance	Good condition
2.	Gas Monitoring Probes Properly secured/locked Functioning Evidence of leakage at penetration Remarks _____	Routinely sampled Needs Maintenance	Good condition N/A
3.	Monitoring Wells (within surface area of landfill) Properly secured/locked Functioning Evidence of leakage at penetration Remarks _____	Routinely sampled Needs Maintenance	Good condition N/A
4.	Leachate Extraction Wells Properly secured/locked Functioning Evidence of leakage at penetration Remarks _____	Routinely sampled Needs Maintenance	Good condition N/A
5.	Settlement Monuments Remarks _____	Located Routinely surveyed	N/A

E. Gas Collection and Treatment		Applicable	N/A
1.	Gas Treatment Facilities <input checked="" type="radio"/> Flaring Thermal destruction Collection for reuse <input type="radio"/> Good condition Needs Maintenance Remarks <u>no longer operating - passive venting occurring</u>		
2.	Gas Collection Wells, Manifolds and Piping <input checked="" type="radio"/> Good condition Needs Maintenance Remarks _____		
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="radio"/> Good condition Needs Maintenance <input checked="" type="radio"/> N/A Remarks _____		
F. Cover Drainage Layer		Applicable	<input checked="" type="radio"/> N/A
1.	Outlet Pipes Inspected Remarks _____	Functioning	N/A
2.	Outlet Rock Inspected Remarks _____	Functioning	<input checked="" type="radio"/> N/A
G. Detention/Sedimentation Ponds		Applicable	<input checked="" type="radio"/> N/A
1.	Siltation Areal extent _____ Depth _____ N/A <input type="radio"/> Siltation not evident Remarks _____		
2.	Erosion Areal extent _____ Depth _____ <input type="radio"/> Erosion not evident Remarks _____		
3.	Outlet Works Remarks _____	Functioning	N/A
4.	Dam Remarks _____	Functioning	N/A

H. Retaining Walls		Applicable	(N/A)
1.	Deformations Horizontal displacement _____ Rotational displacement _____ Remarks _____	Location shown on site map	Deformation not evident Vertical displacement _____
2.	Degradation Remarks _____	Location shown on site map	Degradation not evident
I. Perimeter Ditches/Off-Site Discharge		Applicable	(N/A)
1.	Siltation Areal extent _____ Remarks _____	Location shown on site map	Siltation not evident Depth _____
2.	Vegetative Growth Vegetation does not impede flow Areal extent _____ Remarks _____	Location shown on site map	N/A Type _____
3.	Erosion Areal extent _____ Remarks _____	Location shown on site map	Erosion not evident Depth _____
4.	Discharge Structure Remarks _____	Functioning	N/A
VIII. VERTICAL BARRIER WALLS		Applicable	(N/A)
1.	Settlement Areal extent _____ Remarks _____	Location shown on site map	Settlement not evident Depth _____
2.	Performance Monitoring Type of monitoring _____ Performance not monitored Frequency _____ Head differential _____ Remarks _____		Evidence of breaching

IX. GROUNDWATER/SURFACE WATER REMEDIES		Applicable	N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines		Applicable	<u>N/A</u>
1.	Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks _____ _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks _____ _____		
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks _____ _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		Applicable	<u>N/A</u>
1.	Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks _____ _____		
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks _____ _____		
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks _____ _____		

C. Treatment System		Applicable	(N/A)
1.	Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters _____ Additive (e.g., chelation agent, flocculent) _____ Others _____ Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually _____ Quantity of surface water treated annually _____ Remarks _____		
2.	Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks _____		
3.	Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks _____		
4.	Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks _____		
5.	Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks _____		
6.	Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks _____		
D. Monitoring Data			
1.	Monitoring Data Is routinely submitted on time Is of acceptable quality		
2.	Monitoring data suggests: Groundwater plume is effectively contained Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	Properly secured/locked	Functioning	Routinely sampled
	All required wells located	Needs Maintenance	
Remarks			Good condition N/A
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).			
Remedy functioning as intended and is protective			
B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.			

C. Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
D. Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Attachment 8

Five-Year Review Inspection Photographs



















Attachment 9

**Five-Year Review Public Notice
Advertisements**

high praise for these achievements.

Not only did the bands do well, but the school and community also performed admirably. More than 3,300 students from District 8 participated at Lake High School during the two days. It took over 100 volunteers to make this event happen, with jobs ranging from food service preparation and sales to Judge's Assistants. Parent students and directors work late into the night on Friday at all day Saturday. Everything went smoothly, and many positive comments were made regarding the facility and the strengths of the community and the music

unforgettable four years.

The teachers I had in high school are a huge part of my memories at Lake. Our teachers are people who can be seen helping out at extracurricular activities and at our sporting events, not because they

there is no think to ask for.

high school memories. Already those years in high school seem to have quickly passed us by. While we are all excited about where we are now, we know there is nothing like the times we spend in the high school during lunch, the

For those who would like to more about the magicians, click out Garry and Kelsey's website: carsonentertainment.com

Businesses:
Andrea's Custom Photogra
Art Lan Florist, B.C. Billie
Best Bib and Tucker, Beve
Hair Shop, The Blissful Ho
Carlo's Trattoria, Country I
Accentz, Country Flowers
Dahlman's Carpet, D
ing, Dorum Color
n Finds, The Fr
e, Glazed and Annu
pton Inn, Hartv
Contractors Supply, Hartv
Hardware, Hartville Print
Helen's Kitchen, Hershbe
Homes, J & B Auto, Ji
Autocare, Knowles Press, Kn
Pizza, Lang's Nutrition, Lu
Star, Mariachi Loco's, M
Barber Shop, Mel's Soft Wa
Needles-N-Pins Too, Nic
Body Shop, Inc., Pad
Business, Paramount Photo, P
John's, Paula's Place Hair Sal
Pizza Hut, Protech Water Supp
Schoner Chevrolet, Shear Sh

"The Hartville News"

Hartville, Ohio

Friday, March 24, 2006

Page 2



EPA Reviews Industrial Excess Landfill Superfund Site Uniontown, Ohio

U.S. Environmental Protection Agency is reviewing the effectiveness of the cleanup at Industrial Excess Landfill Superfund site in Uniontown. Superfund law requires five-year reviews of sites where the cleanup is either done or in progress, but hazardous waste remains on-site. These five-year reviews are done to ensure that the cleanup remains effective and protects human health and the environment.

On-site ground water continues to be contaminated with a handful of volatile organic compounds. These VOC's resulted from a mixture of both solid and liquid industrial wastes being deposited in the landfill. Chemical, hospital waste, septic wastes, and wastes from the general public were also deposited there. Recent groundwater survey data indicate that the level of contamination is decreasing, both in terms of number of contaminants and in concentration. Methane concentrations in landfill gasses continue to dissipate. Municipal water was extended to area surrounding the site as a precaution.

Five-year reviews look at:

- Site information
- How the cleanup was done
- How well the cleanup is working
- Any future actions needed

The results will be available for viewing at:

Uniontown Public Library
120 N. Market Street
Uniontown

Questions or concerns regarding the cleanup or the review should be directed to:

Timothy J. Fischer
Remedial Project Manager
EPA Region 5 (SR-6J)
77 W. Jackson Blvd
Chicago, IL 60604
(312) 886-5787 or (800) 621-8431
Weekdays 9:00 a.m. to 5:00 p.m.
fischer.timothy@epa.gov

valued my time at Lake. Meeting new people I have heard about all kinds of high school experiences, from private schools and single gender schools. I have looked at their experiences and I have never been happier to be a part of such a wholesome place. I always remember graduates telling me while I was in High School to make the most of it. I really hope to send the same message to current and future students because those years are irreplaceable and in a quick four years those will be your high school memories for the rest of your life.

Sincerely,
Katie Walko
5347 Bonham Road
Oxford, Ohio 45056

Letter to the Editor,

In response to the Letter to the Editor published in The Hartville News on March 17, 2006 written by Matthew Finley:

I would like to correct an apparent misunderstanding regarding the relocation of the Hartville Redi-Mix.

The actual facts are: as a former owner of the Hartville Redi-Mix, the only portion of the property annexed in the Village is the rear parking area off Sunnyside Street. The rest of the property, including the buildings off Edison Street, are in Lake Township.

After the property was sold to the current owners — that is when Leach Trucking Hartville Redi-Mix relocated to their Uniontown address.

Sally J. Higginbotham
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CRUISE: Be careful ashore

CONTINUED FROM A-1

mas and one of the world's highest lakes.

Dante Noce, Arica's municipal tourism director, identified the dead as Marvin Bier, 79; Shirley Bier, 76; Marian Diamond, 76; Hans Eggers, 72; Maria Eggers, 71; Ira Greenfield, 68; Linda Greenfield, 67; Arthur Kovar, 67; Frieda K. Rubin, 74; Carole Ruchelman, 63; Barbara Rubin, 69; and Robert Rubin, 72. He said all but Ira Greenfield died at the scene.

Noce identified the injured tourists as Bernard Diamond, 66, and Harold Ruchelman, 67. Dr. Mauricio Lynn of Jackson Memorial Hospital in Miami said one of the men broke a leg

and the other broke a hand, and Hanrahan said both were in stable condition.

This week has proved a tough one for the cruise industry. On Tuesday, the ship after it was

Julie Benson, spokeswoman for Princess Cruises, said the company has reached no conclusions about the cause of the blaze.

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EPA Reviews Industrial Excess Landfill Superfund Site Uniontown, Ohio

U.S. Environmental Protection Agency is reviewing the effectiveness of the cleanup at Industrial Excess Landfill Superfund site in Uniontown. Superfund law requires five-year reviews of sites where the cleanup is either done or in progress, but hazardous waste remains on-site. These five-year reviews are done to ensure that the cleanup remains effective and protects human health and the environment.

On-site ground water continues to be contaminated with a handful of volatile organic compounds. These VOCs resulted from a mixture of both solid and liquid industrial wastes being deposited in the landfill. Chemical, hospital waste, septic wastes, and wastes from the general public were also deposited there. Recent groundwater survey data indicate that the level of contamination is decreasing, both in terms of number of contaminants and in concentration. Methane concentrations in landfill gasses continue to dissipate. Municipal water was extended to area surrounding the site as a precaution.

Five-year reviews look at:

- Site information
- How the cleanup was done
- How well the cleanup is working
- Any future actions needed

The results will be available for viewing at

Uniontown Public Library
120 N. Market Street
Uniontown

Questions or concerns regarding the cleanup or the review should be directed to

Timothy J. Fischer

Remedial Project Manager

EPA Region 5 (SR-6J)

77 W Jackson Blvd

Chicago, IL 60604

(312) 886-5787 or (800) 621-8431

Weekdays 9:00 a.m. to 5:00 p.m.

fischer.timothy@epa.gov

lity as im "Beacon Journal" te nears

Akron, Ohio
Friday, March 24, 2006
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itives stress border security

conservatives.

Bush is working hand in hand with employers who want cheap labor to clean hotel rooms, pick crops and do other tasks that they say keep their businesses competitive.

Senate Majority Leader Bill Frist, R-Tenn., says he understands those economic issues, but his focus is on the concern voiced by social conservatives — national security.

"The most important thing is that we keep our borders safe, we keep America safe," said Frist spokeswoman Amy Call. "It's obvious there are drugs, there are criminals coming through those borders. There are also people from known terrorist organizations coming through those borders."

States is keep illegal immigrants from entering the country. About the same proportion said they favor a guest-worker program for illegal immigrants, but 46 percent said those workers should have to return first to their native countries and apply. About half of the respondents favored deporting all illegal immigrants.

Frist's bill sidesteps the question of temporary work permits; it would tighten borders, add Border Patrol agents and punish employers who hire illegal immigrants. He has left open the possibility of replacing his legislation with a measure being drafted by the Senate Judiciary Committee that includes a guest-

mate Minority Leader Har-
reid, D-Nev., backed by labor
unions, has said he will do all he
can, including filibuster, to
thwart Frist's legislation.



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